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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,613	10/24/2003	Mark A. Francis	K-2043	8816

27877 7590 09/09/2005

KENNAMETAL INC.
P.O. BOX 231
1600 TECHNOLOGY WAY
LATROBE, PA 15650

EXAMINER	
ADDISU, SARA	

ART UNIT	PAPER NUMBER
3722	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/692,613	FRANCIS ET AL.	
	Examiner	Art Unit	
	Sara Addisu	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The rejection of the claims under 35 USC 112 1st paragraph is withdrawn due to Applicant's amendment (6/10/05).

Response to Arguments

Applicant's arguments, see page 8, lines 1-22, filed 6/10/05, with respect to the rejection(s) of claim(s) 1-16 under 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of different interpretation of the previously applied reference (Koelewijn, U.S. Patent No. 4,681,485).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3-16, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Koelewijn (U.S. Patent No. 4,681,485).

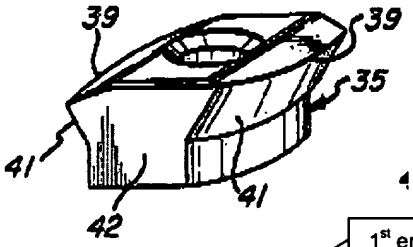
Koelewijn teaches and provides as set forth in claims 1 & 11, a rotary cutting tool (end mill cutter) (20) having a rotational central axis (21) and plurality of pockets (38),

and cutting inserts (rhomboid inserts 35: located radially across from each other: see figure 4). Each insert (35) is supported in a pocket defined in its respective slot (30) (Col. 5, lines 3-4). It is inherent that as basic manufacturing practice, tools have a predetermined dimensional tolerance (also admitted by Applicant on Page 5, lines 29-30) and the tolerances are set such that the tool stays within the set tolerance to ensure that discrepancies and poor workmanship are not introduced. Therefore, it is inherent that Koelewijn's tool has a predetermined dimensional tolerance and the depth of the cuts (performed by the first and second taper of the cutting edge) will remain within the tolerance and therefore will never exceed it. Additionally, Koelewijn teaches each insert being mounted in an insert seat (pocket) having 60-degree V shape or conical configuration to obtain maximum rigidity in seating of the inserts (Figure 12a and Col. 3, lines 11-15 & 40-43). Consequently, the proper positioning of the inserts is ensured by retaining against centrifugal dislodgment during rotation of the tool.

Koelewijn also teaches as claimed in claims 1, 3 and 12, inserts (therefore also associated pockets) in each slot are circumferentially spaced (i.e. the 2 inserts, 35) in such a manner that they have progressive engagement with the workpiece during rotation (i.e. cutting contact made with the workpiece by one insert (35) overlaps cutting contact made with the workpiece by a subsequent passing insert (the other 35). Koelewijn also teaches inserts in adjacent slots being staggered axially therefore as the cutter rotates and workpiece material which is left uncut between the adjacent inserts of one slot (30) is wiped away by the intervening (subsequently passing) insert in the following slot (30), thus eliminating overlap [both inwardly and outwardly projecting

lap marks] marks (i.e. first insert generates overlapping cutting contact with a workpiece relative to cutting contact made with the work piece by a second insert) (Col. 5, lines 59-68 & Col. 6, lines 1-5). (Note: The Examiner has determined that in order for the inserts of Koelewijn's invention to move into progressive engagement with the workpiece as stated in the patent, the overlap/stagger of the inserts has to be by more than half of the length of the cutting edge of the insert, as claimed in claims 3 and 16). Each cutting insert (35) has a first end, a second end, at least one cutting edge (39) spanning the first end and the second end, a first corner formed at the juncture of the cutting edge and the first end, and a second corner formed at the juncture of the cutting edge and the second end (note: both first and second end are visible when viewed in a plan view: see diagram below). Koelewijn also teaches cutting edges having first tapered section, and a second tapered section extending from the first corner part way to the second corner. Furthermore, Koelewijn teaches in Figures 6 and 7, tapered sections of the insert having a convex curve configuration (with constant radius).

FIG. 6



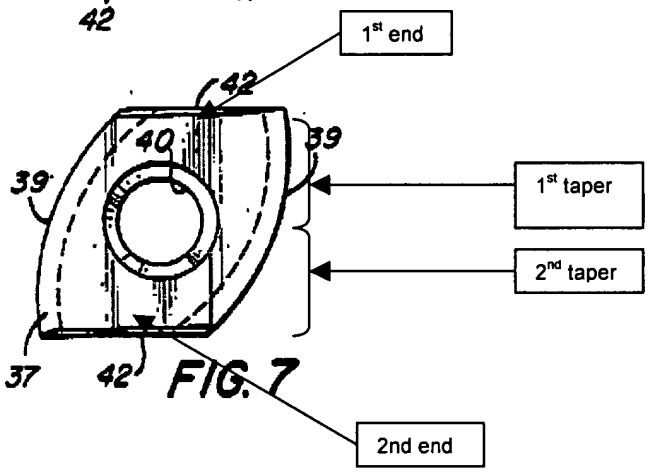
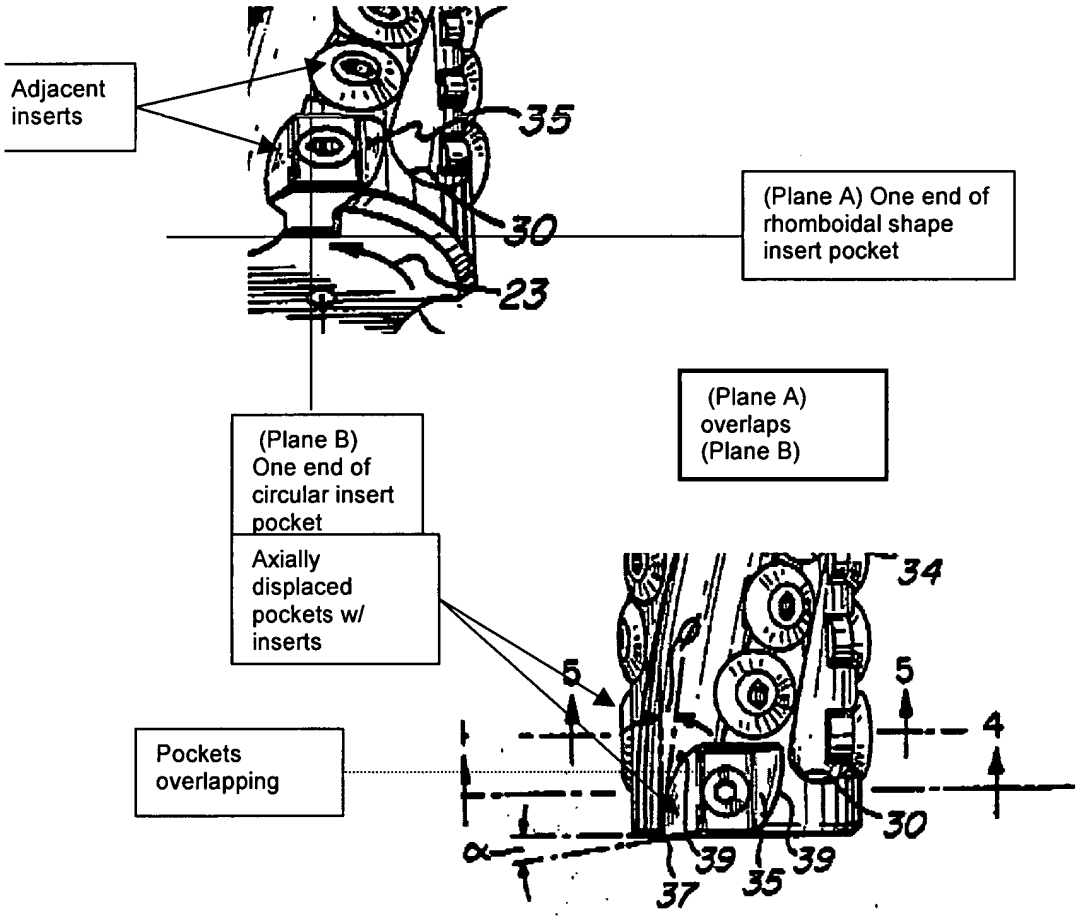


FIG. 7

Furthermore, Koelewijn teaches the body of the tool having plurality of flutes with pockets disposed within the flutes and inserts mounted in adjacent helical rows (along the length of the body) each having a curved cutting edge portion (of the inserts supported by the insert pockets) extending into (at least two formed) helical flutes or slots as claimed in claims 9, 10 and 13 (Figures 1 & 2 and Col. 3, lines 40-45). Koelewijn also teaches in Figure 6, insert that is "substantially" a parallelepiped when viewed in side view.

Regarding claim 11, due to well known discrepancies, the radial runout tolerance dimension of each pocket exceeds the manufacturing tolerance of the pocket (As admitted by Applicant, Page 7 of the Remarks, lines 10-17).

Regarding claims 14 and 15, Koelewijn teaches (look at drawings below) axially displaced adjacent inserts located such that they slightly overlap. Furthermore, Koelewijn teaches inserts along a helical flute located such that the end of one insert overlaps the end of an adjacent insert. Examiner has defined the end of the rhomboidal shaped insert (35) to be (plane A) and the end of the circular insert pocket (34) to be (Plane B). As shown below, planes (A & B) overlap.



Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu
(571)272-6082

SA
8/3/05

BOYER D. ASHLEY
PRIMARY EXAMINER